

Case 2983***Achatinellastrum* Pfeiffer, 1854 and ACHATINELLIDAE Gulick, 1873 (Mollusca, Gastropoda): proposed conservation**

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Abstract. The purpose of this application is to conserve the generic name *Achatinellastrum* Pfeiffer, 1854 for a terrestrial snail from Oahu, one of the Hawaiian islands, together with the family-group name ACHATINELLIDAE Gulick, 1873. These names are threatened by the unused senior subjective synonyms *Helicteres* Beck, 1837 and HELICTERINAE Pease, 1870 (based on *Helicter* Pease, 1862, a junior objective synonym of *Helicteres*) and it is proposed that *Helicteres* and *Helicter* be suppressed. The application is submitted under Article 23.9.3 of the Code.

Keywords. Nomenclature; taxonomy; Gastropoda: ACHATINELLIDAE; *Achatinella*; *Achatinellastrum*; tree snails; Hawaii.

1. The genera *Achatinella* Swainson, 1828 and *Achatinellastrum* Pfeiffer, 1854 and the family ACHATINELLIDAE Gulick, 1873 are widely known, particularly because of the publicity that conservation of Pacific island tree snail species has received. The senior synonym *Helicteres* Beck, 1837 has remained unused since 1847, and HELICTERINAE Pease, 1870 has not appeared since publication, but the conditions of Article 23.9.1.2 are not met for conservation of the names *Achatinellastrum* and ACHATINELLIDAE under the Code. The application is submitted under Article 23.9.3.

2. The name 'Helicteres' was first proposed by Férussac (1821, p. 56 quarto/p. 60 folio) for a division of his subgenus *Cochlogena* of the genus *Helix*, based on nine taxonomic species of Hawaiian land snails, only two of which had available names by reference to illustrations in vol. 11 of Chemnitz's (1795) *Systematisches Conchylien-Cabinet*. As is evident from Férussac's formation of names of similar levels of infrageneric groupings in his 1821 work, 'Helicteres' was written in the nominative plural and is therefore not an available name. Menke (1830, p. 25), essentially copying Férussac's (1821) classification and names, also used the name 'Helicteres' in the nominative plural. The first author to make available the name *Helicteres* was Beck (1837, p. 51) who used it for a subgenus of *Bulimus* and included a number of species of Hawaiian land snails, among them *Helix vulpina* Férussac, 1824 (pl. 68, figs. 13 and 14; text, p. 477, 1825). All the nominal taxa that Beck listed in *Helicteres* are currently included in the families ACHATINELLIDAE Gulick, 1873 (p. 89) and AMASTRIDAE Pilsbry, 1910 (see Cowie, Evenhuis & Christensen, 1995). Herrmannsen (1847, p. 515) designated *Helix vulpina* as the type species of *Helicteres* Beck.

3. Swainson (1828, p. 83) introduced the name *Achatinella* for *Monodonta seminigra* Lamarck, 1822 (p. 37), six new nominal species and one variety. These are all land snails from the Hawaiian island of Oahu. Swainson (1828, p. 83) designated *M. seminigra* as the type species of the genus. Subsequently Lamarck's name has been treated as a junior synonym of *Helix apexfulva* Dixon, 1789 (p. 354, plate opposite p. 355, fig. 1, two views), described from the Hawaiian Islands (see, for example, Pilsbry & Cooke, 1914, pp. 318, 320; Welch, 1942, p. 176; and Cowie et al., 1995, pp. 37, 46).

4. Pfeiffer (1854, p. 133) proposed *Achatinellastrum* as a subgenus of *Achatinella*, with 44 included nominal species, among them *Achatinella producta* Reeve, 1850 (*Achatinella*. pl. 2, species 13). Pilsbry & Cooke (1914, p. 181) designated *A. producta* as the type species of *Achatinellastrum*.

5. *Helix vulpina* Férussac, 1824, the type species of *Helicteres* Beck, 1837, is currently placed in the subgenus *Achatinellastrum* Pfeiffer, 1854 in the family ACHATINELLIDAE (see Cowie et al., 1995), rendering the name *Achatinellastrum* a junior subjective synonym of *Helicteres*.

6. The name *Helicter* was introduced by Pease (1862, p. 6) for Férussac's 'Helicteres'. It was treated as an incorrect subsequent spelling of 'Helicteres' by Cowie et al. (1995, p. 48) but, since Pease (1862) noted the change in spelling, it should correctly be considered an unjustified emendation, and thus a junior objective synonym, of *Helicteres* Beck, 1837. 'Helicterella' Gulick (1873b, p. 497) is a nomen nudum. The names *Helicteres* Beck, 1837 and *Helicter* Pease, 1862 have usually been treated as synonyms of *Achatinella* (see, for example, Pilsbry in Gwatkin, Suter & Pilsbry, 1895, pp. 237, 238; Pilsbry & Cooke, 1913, p. 117; 1914, p. 274; Thiele, 1931, p. 499; Zilch, 1959, p. 134; Vaught, 1989, p. 79), but if *Achatinella* is considered to be distinct from *Achatinellastrum*, which is the case in all these works, then the names *Helicteres* and *Helicter* are synonyms of *Achatinellastrum*.

7. Acceptance of the priority of the name *Helicteres* Beck, 1837 over *Achatinellastrum* Pfeiffer, 1854 would overturn accustomed usage. Pease (1862, p. 6; 1870, p. 644) advocated priority of 'Helicteres Férussac, 1821' over *Achatinella* Swainson, 1828, considering Férussac's name to be available and the two names to be synonyms. In his (1862) publication Pease changed *Helicteres* to *Helicter* (para. 6 above). Herrmannsen (1847, p. 515) and Gray (1847, p. 178) also considered *Helicteres* to be available from Férussac (1821), with *Achatinella* Swainson as a junior synonym, although Gray acknowledged that the different type species, *Achatinellastrum vulpina* (Férussac, 1824) and *Achatinella seminigra* (Lamarck, 1822), at some future time might be shown to belong to distinct genera (or subgenera) (see Gray, 1847, p. 130). No other authors have used *Helicteres* as a valid name. All subsequent authors have used *Achatinella* and/or *Achatinellastrum*, in some cases giving explicit reasons for doing so. For example, Gulick (1873a, p. 90) noted that *Helicteres* was 'preoccupied as the name of a genus in the vegetable kingdom. We might hesitate to reject it if it had been in general use for many years; but no good reason exists for reviving an objectionable name which has long been rejected', and Pilsbry in Gwatkin, Suter & Pilsbry, 1895 (pp. 237–238) recorded *Helicter* Pease as a synonym of *Achatinella* and that 'there is no reasonable excuse for reviving Férussac's term *Helicteres*, for it was not intended as a generic or sub-generic name by Férussac, and is improper in form. Its use would open the door to an endless series of vagaries in nomenclature, as any one who examines Férussac's original publication may see'.

The *Manual of Conchology* (Pilsbry & Cooke, 1912–1914) was the last work to revise the genus *Achatinellastrum* and remains the standard publication that has been followed until the present. In it (p. 117), *Helicteres* Beck and *Helicter* Pease are listed as synonyms of *Achatinella* and (p. 180) no synonyms are listed under *Achatinellastrum*. In addition to the publications cited in this application, a list of recent representative works in which the name *Achatinellastrum* has been used includes Welch (1958), Zilch (1962), Christensen (1985), Thiele (1992) and the U.S. Fish and Wildlife Service (1993).

8. The family-group name HELICTERINAE Pease, 1870 (p. 645), based on *Helicter* Pease, 1862, predates ACHATINELLINAE Gulick, 1873 (ref. 1873a, p. 89), based on *Achatinella* Swainson, 1828 (see also Baker, 1956, p. 132). However, no works subsequent to its original proposal have used HELICTERINAE. In addition to the above list of works relating to the usage of generic names, all of which use Gulick's family-group name, publications that have used the name ACHATINELLIDAE include popular works, text books, endangered species lists and scientific papers not only in systematics but in ecology, conservation, evolutionary biology and archaeology (see, for example, the recent works of Boss, 1982; Christensen & Kirch, 1986; Hadfield, 1986; Abbot, 1989 and Cowie, 1996, 2001). A representative list of a further 21 publications that have used ACHATINELLIDAE in the last 20 years is held by the Commission Secretariat). The family ACHATINELLIDAE is endemic to islands of the Pacific, where it has radiated spectacularly (see Cooke & Kondo, 1960). The sub-family ACHATINELLINAE, composed entirely of tree snails, is endemic to the Hawaiian Islands. The genus *Achatinella*, with *Achatinellastrum* as one of three subgenera, is endemic to the island of Oahu. On this island it has speciated dramatically and developed immense variation in shell colour and banding patterns that have long attracted the attention of evolutionary biologists (see, for example, Gulick, 1905 and Wright, 1978). Members of the ACHATINELLINAE are under severe threat of extinction through the impact of human activities (see Hadfield, 1986). Twenty-four species of *Achatinella* (those considered possibly still extant) and 23 other species of ACHATINELLIDAE are listed as threatened in the 1996 *IUCN Red List of Threatened Animals* (Baillie & Groombridge, 1996, pp. 120–121); together with a further 52 achatinellid species and two subspecies at risk or extinct (pp. 188, 213, 238), and the entire genus *Achatinella* is included in the *U.S. List of Endangered and Threatened Wildlife and Plants*. Considerable confusion would ensue if the names *Helicteres* Beck, 1837 and HELICTERIDAE Pease, 1870 were resurrected. By rejecting *Helicteres* in favour of *Achatinellastrum* Pfeiffer, 1854 and suppressing the name *Helicter* Pease, 1862 not only would stability in the generic name be ensured but the usage of ACHATINELLIDAE would be fixed, ensuring stability also in the family-group name.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the following names for the purposes of the Principle of Priority but not for those of the Principle of Homonymy:
 - (a) *Helicteres* Beck, 1837;
 - (b) *Helicter* Pease, 1862;
- (2) to place on the Official List of Generic Names in Zoology the name *Achatinellastrum* Pfeiffer, 1854 (gender: neuter), type species by subsequent designation by Pilsbry & Cooke (1914) *Achatinella producta* Reeve, 1850;

- (3) to place on the Official List of Specific Names in Zoology the name *producta* Reeve, 1850, as published in the binomen *Achatinella producta* (specific name of the type species of *Achatinellastrum* Pfeiffer, 1854);
- (4) to place on the Official List of Family-Group Names in Zoology the name ACHATINELLIDAE (type genus *Achatinella* Swainson, 1828);
- (5) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the following names:
 - (a) *Helicteres* Beck, 1837, as suppressed in (1)(a) above;
 - (b) *Helicter* Pease, 1862, as suppressed in (1)(b) above;
- (6) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the name HELICTERINAE Pease, 1870 (invalid because the name of the type genus has been suppressed in (1)(b) above).

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